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NIXON & VANDERHYE, P.C.
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER
NGUYEN, DAT

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/690,818	LINK, PATRICK J.
	Examiner	**Art Unit**	
	Dat T. Nguyen	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2007*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6,14 and 17-58* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6,14 and 17-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

This office action is responsive to amendments filed on 12/06/2007 in which applicant

amends claims 6, 14, 18, 23, 24, 29 and 37, adds new claims 38-58, and responds to

claim rejections. Claims 6, 14 and 17-58 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 6, 14, 18, 23, 27, 29, 32 and 35-58 and are rejected under 35 U.S.C. 103(a)

as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment

System Emulator v1.19 readme.txt dated June 5, 1999 in view of Dahl et al (US

5,949,985) and further in view of Gameboy98.

Regarding claims 6 and 14, Snes9x: The Portable Super Nintendo Entertainment

System Emulator v1.19 (herein referred to as "Snes9x") discloses an emulator program

that emulates the SUPER NINTENDO ENTERTAINMENT SYSTEM (SNES). This

emulator program is executed by a target platform such as a PC that is different than

the video game platform (Snes9x page 5). It is well know in the art that a PC is capable

of displaying graphical information on a target computing display device that has

read/write memory and is capable of receiving user inputs. The Snes9x emulator

processes and parses SNES ROM images (Snes9x page 6). The emulated platform is

a handheld platform in that a player holds the game controllers of a SNES game system

in their hands, thus constituting a handheld video game system. Snes9x also discloses

modeling at least some display timing activities of the handheld video game device

(page 8). Snes9x is an emulator program that emulates videogame software initially

intended only for use with the SNES and so the videogame software is still capable for

use with the original system. The Snes9x emulator produces real time interactive game

presentations on the target platform (Snes9x page 4). The Snes9x emulator allows the

target platform the option of running the emulated games in a windowed mode or a full

screen mode (Snes9x page 7).

Snes9x is silent regarding the ROM pages and said method further includes said

emulator program allocating ROM pages in said target computing device read/write

memory and duplicating at least a portion for said allocated ROM pages. Dahl et al.

discloses a method and data processing system for emulating a program that utilizes a

typical paging architecture that swaps the pages between a main store and a DASD.

To make the process more efficient and minimize overhead during emulation, the data

is accessed identically, which minimizes paging. Since the emulated DASD and

emulated main store are accessed identically, it is reasonable to assume that they

contain the same files. The difference is that upon execution, the files in the main store,

which are often scattered in discontinuous physical locations, are copied into an

emulated DASD that is stored continuously (abstract, col. 2, lines 45-55, col. 5, lines 15-

65). Furthermore, Dahl et al. discloses caching of instruction portions of code (col. 6,

lines 1-15). Caching is well known in the art as duplicating a portion of data stored in the system, which is frequently used in order to minimize the resources by eliminating the need to constantly access the code every time it is needed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize the paging architecture and duplication of ROM pages in order to minimize address translation and paging overhead during emulation (col. 5, lines 49-52).

It should also be noted that the combination of Snes9x and Dahl would create a game system that has a pointer table system that performs the functions as claimed by the applicant. Detailed discussion of the functions of the pointer table system can be found above.

The prior art is further silent regarding emulation of a handheld video game device wherein the housing, and display are in one piece and runs video game software image out of a page-based read only memory (ROM). Gameboy98 teaches the emulation of the Nintendo's Gameboy system which is a handheld system as described above using ROM cartridges (pages 1-4). Therefore it would have been obvious to one or ordinary skill in the art at the time of applicant's invention to emulate the games of Nintendo's Gameboy system since Gameboy is a very popular system with many fans and favored games.

At the time the invention was made, it would have been an obvious mater of design choice to a person of ordinary skill in the art to duplicate commonly used instructions (ROM pages) across a set of emulated instructions because applicant has not disclosed that duplicating of ROM pages across said ROM pages provides an

advantage, is used for a particular purpose, or solves a stated problem. One of ordinary

skill in the art, furthermore, would have expected Dahl's duplication of instructions on a

cache memory, and applicant's invention, to perform equally well with either the

duplicated ROM pages of the claim or the cached instructions of Dahl because both

duplications perform the same function of reducing page swapping. Therefore, it would

have been prima facie obvious to modify the prior art to obtain the invention as specified

in claim 1 because such a modification would have been considered a mere design

consideration which fails to patentably distinguish over the prior art.

Regarding claim 18, the prior art is further silent regarding modeling the liquid

crystal display of the handheld game system using a virtual liquid crystal display

controller to maintain real time synchronization. Gameboy98 teaches the use of such a

LCD display controller (page1 dated Dec 1999, page 2 11th Nov 1998) to emulate the

effects of the Gameboy LCD screen on the target computing device that may not have

the same LCD display as that of the Gameboy system. Therefore it would have been

obvious to one of ordinary skill in the art at the time of applicant's invention to include in

the emulation system an LCD controller as that taught by Gameboy98 since it is known

that the Gamyboy system had a unique LCD display that requires a controller to adapt

its functions to a target computing display that may not have the same functionality as

that of the Gameboy's display. Such an adaptation and addition would preserve the

game play of the Gameboy games on the target emulation system.

Regarding claim 23, Snes9x does not disclose specifically the use of a page

table to remap memory access instructions into different memory locations. However,

Dahl et al. discloses a system wherein an emulator program may be used to emulate a target platform on a different host platform. This emulation system that Dahl et al. discloses utilizes translation or page tables that associates page selector bits with a 16-bit page number, which is concatenated to the page offset to access appropriate physical memory locations (Dahl 5:11 – 43). One of ordinary skill in the art would be motivated to modify Snes9x in view of Dahl et al. to provide an emulation system that utilizes page tables for the remapping of memory access instructions into different memory locations. One would be motivated to do so because Dahl states that by referencing storage objects through a translation table, the memory pages associated with a storage object can be scattered in dis-contiguous memory locations within the main store, while appearing to be contiguous.

Regarding claim 27, Snes9x discloses a frame skip count that enable the selectively skip frames (Snes9x page 8).

Regarding claim 29, Snes9x discloses a video game platform emulator as discussed above. The video game emulator emulates a video game platform on a different target platform. The purpose of the emulator is to emulate the video game platform on the target platform in every way. This would include the video game platforms memories and registers. Including the size of the registers, such as byte, word and long formats. Thus it would be obvious to create an emulator that emulates these aspects of the video game platform on the target platform. One of ordinary skill in the art would be motivated to modify Snes9x to emulate the memory structures of the video game platform, wherein the formats include byte, word and long register formats.

One would be motivated to do so because these are common register formats and purpose of the emulator is to emulate all aspects of the video game platform on the target platform, thus emulating the register formats.

Regarding claim 32, Snes9x discloses that a wide variety of joysticks or user input devices can be used by the Snes9x emulator (Snes9x page 10).

Regarding claims 35 and 36, Snes9x is for use in PCs, however it is well known in the art that laptop computers possess the same functionality and performance characteristics, which would make them capable of performing the same tasks as a standard desktop PC. The fact that they are laptops makes them handheld and portable. Furthermore, the examiner does not believe it to be a patentably distinct feature to implement the emulation program into a PDA since it is well known in the art that computers are constantly getting smaller and that devices such as PDAs and cellular phones are constantly being given more and more functionality of computers. Therefore it would be a mater of routine to one of ordinary skill in the art at the time of invention to implement the emulation program of Snes9x into a PDA or handheld portable computer in order to allow for users to play the games while being mobile.

Regarding claim 37, the limitations of claim 37 have been addressed above, Regarding the preamble which requires a handheld portable battery-operated computer device, please refer to the discussion regarding claims 35 and 36 above.

Regarding the image software, ROM pages, generation of real time audio-visual presentation in response to video game software image, displaying audio-visual image as a subset of display area, and duplicating ROM pages, please see the discussion above regarding claims 6 and 14.

Regarding claim 38, Snes9x emulates the Super Nintendo game system that emulates the ROM-based pluggable game cartridges of the system.

Regarding claim 39, 46 and 53, the prior art is silent regarding explicitly reserving at least twice the space occupied by the ROM pages and duplicating half of each page allocated in random access memory. As discussed above in claim 6, Dahl teaches the use of emulating program data and duplication of instructions, however Dahl does not teach the explicit "half of each page allocated in random access memory." At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to duplicate the ROM pages as claimed because applicant has not disclosed that duplicating the pages at least twice the space occupied by the ROM pages and duplicating half of each page allocated in random access memory provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the instruction duplication of Dahl and applicant's claimed invention to perform equally well with either the paging architecture as taught by Dahl or the claimed allocating at least twice the space occupied by ROM pages in the handheld video game device and

duplicating half of each page allocated in random access memory. Therefore it would have been a prima facie obvious to modify the prior art to obtain the invention as claimed by claim 39 because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art.

Regarding claim 40 , 47 and 54, Snes9x teaches the use of emulation of cartridge ROM. However Snes9x does not explicitly require that the ROM banks are emulated in a different RAM page. Dahl teaches the use of RAM pages for each set of instructions (ROM bank) (5:1-6:67). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to segregate the ROM banks into separate RAM pages in order to break them down to more manageable chucks of data. Such a modification would make the system operate more smoothly, since the processing of bits or commands/instructions one at a time requires less processing power than that of processing an entire program.

Regarding claim 41, 48 and 55, please see rejection of claim 6 and 40 above. Regarding the limitations of a page count register. It is notoriously old and well known in the art that all paging architectures require the use of a page count register to function since the computer needs to know which page was previous loaded or has been loaded so that in the event that a previously loaded page is required, it may page swap to that page. Such limitations are required by said systems as with out such limitations of a selection pointer, the computer would not know where the required commands are stored in memory (Dahl 5:11-46). Therefore it would have been notoriously obvious to one of ordinary skill in the art to use a page count register as

required by claim 41 to have an operating page architecture since without the count

register, the system would not know which pages have been loaded and would not be

able to swap between loaded pages and therefore defeat the purpose of a paging

architecture since without the count register or some means of indicating a page has

been loaded, the system would not work.

Regarding claims 42-45, 49-52 and 56-58, the prior art files to explicitly teach a

write protect function on the emulated ROMs. However it is notoriously old and well

known in the art to write protect data that one does not wish to be altered such data

would include that of the ROM images since they are originally intended to be Read-

Only-Memory and therefore an emulation of such would require the emulated ROM

pages to be write-protected as well. Write protecting data is a mater of routine to one of

ordinary skill in the art and therefore it would have been obvious to one of ordinary skill

in the art at the time of invention to write protect the ROM data files in order to prevent

the data from being altered since an alteration of the ROM files could possibly render

the game useless.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 in

view of Dahl et al. and GameBoy98 as applied to claim 6 above, in view of

Nishiumi et al (US 6,007,428).

Regarding claims 17, Snes9x is silent as to what type of display screen that the

system can utilize, such as a liquid crystal display. However, Nishiumi et al discloses a

video game system wherein the display unit is a liquid crystal display (Nishiumi et al
25:56 – 57).

It would be obvious to one of ordinary skill in the art to modify Snes9x in view of
Nishiumi et al for the purpose providing a video emulator system that displays emulated
video information on a liquid crystal display. One would be motivated to use a liquid
crystal display because they utilize less space and provide accurate video
representations.

**Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x:
The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in
view of Dahl et al. and Gameboy98 as applied to claim 6 above and in view of
Munshi (US 6,084,600).**

Regarding claim 19, Snes9x discloses a video game platform emulator. Snes9x
does not disclose the use of hardware assisted BLIT memory transfers. However
Munshi et al discloses a system for the speeding up of pixel data transfers (bitblits) by
compressing and word aligning the data transferred. Munshi discloses that one way to
reduce the amount of required bandwidth in a system when transferring pixel data is to
use bitblit operations, wherein a rectangular region within the display memory is
specified and data for pixels within the region is transferred (Munshi 1:57 – 62). While,
Munshi discloses that this approach is sometimes associated with problems, it is stated
that this is still effective for transferring data.

One of ordinary skill in the art would be motivated to modify Snes9x in view of
Munshi for the purpose of using Blit operations to transfer pixel data. BLIT operations

are known for reducing the bandwidth loads upon a system when updating pixel information in memory.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. and Gameboy98 as applied to claim 6 above and in view of Mackey et al (US 5,153,577).

Regarding claim 20, Snes9x does not disclose a precomputed translation table that translates the graphics of the video game platform. However, Mackey et al discloses an emulation system that will emulate a PC on another host system or platform (Mackey et al 3:51 – 55). The system of Mackey et al. discloses the use of translation tables (Tables 1, 6 – 9) that determine how that graphical character formats will be displayed upon the host platform (Mackey 44:60 – 45:60).

One of ordinary skill in the art would be motivated to modify Snes9x in view of Mackey et al to provide an emulation system that utilizes translation tables to convert graphic formats that are compatible with the target platform. This would be beneficial because when running an emulator on a target platform the emulator must be able to translate the native graphics of the video game platform into a format the target platform can display.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in

view of Dahl et al. and Gameboy98 as applied to claim 6 above and in view of

Sterchi (US 2003/0207712).

Regarding claim 21, the Snes9x system emulates the SNES video game

platform. Thus in order to run properly the emulator must emulate or simulate the actual

hardware and memory structures of the emulated system. Otherwise the original game

ROMS would be rendered useless. Snes9x also discloses that in order for the emulator

to run the target platform must have at least 16 MB of RAM (Snes9x page 5). While

Snes9x does not specifically disclose that the emulator emulates registers and other

hardware based memory structures in RAM, it is highly implied. However, Sterchi et al

discloses a system that uses an emulator, wherein the emulator can be run on an

entirely different hardware platform than the video game platform. Sterchi also

discloses that the emulator may emulate or simulate some or all of the hardware and/or

software components of the target system (Sterchi page 2:par 22).

One of ordinary skill in the art would be motivated to modify Snes9x in view of

Sterchi et al for the purpose of emulating registers and memory structures of the video

game platform in RAM of the target platform. Sterchi discloses an emulator that would

emulate all of the hardware or software components of the targets system, thus this

would include components such as the registers and memory structures.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x:

The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in

view of Dahl et al. and Gameboy98 as applied to claim 6 above and in view of

Morley (US 5,781,758).

Regarding claim 22, Snes9x does not disclose the uses of a jump table to parse

incoming binary instructions. Morley however does disclose an emulation system that

utilizes jump tables for the purpose of reducing memory requirements (Morley 3:21 –

48). Morley discloses that a jump table is commonly referred to as a dispatch table

(Morley 1:42 – 50). Morley discloses that instead of storing every instance of a routine,

the dispatch table will store the routine in memory when it is called and also store the

address of the routine in memory in place of the pointer. Thus speeding up emulation.

One of ordinary skill in the art would be motivated to modify Snes9x in view of

Morley to provide an emulation system that utilizes jump tables or dispatch tables to

reduce the memory requirements on the system. By not storing every instance or a

routine but only the address or a statically stored routine, unnecessary memory usage is

eliminated.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x:

The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in

view of Dahl et al. and Gameboy98 as applied to claim 6 above and in view of

Z80-68K-v150 Z80 Engine written in 68020 assembler for inclusion in C/C++

projects, written by Gunter Woigk, dated Dec 25, 1999.

Regarding claim 24, Snes9x does not disclose a read only memory protection

feature to prevent overwriting of ROM's during emulation. However, Woigk discloses an

emulator package called the z80-68k which supports write protection for ROM's (Woigk

page 2, 6).

One of ordinary skill in the art would be motivated to modify Snes9x in view of

Woigk to provide an emulator that had write protection functions such that the ROM's

don't get overwritten during emulation. This would be of benefit due such that the

ROM's are always protected from being overwritten.

Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19

readme.txt in view of Dahl et al. and Gameboy98 as applied to claim 6 above and

in view of Hannah (US 4,771,279).

Snes9x teaches a CPU cycle timer that enables a user to set a percentage of CPU

cycles to execute per can line. However, Snes9x fails to explicitly recite modeling

including using a state machine defining at least a horizontal blank state and a vertical

blank state. However in a related patent, Hannah teaches a method and apparatus for

adapting high resolution images to low resolution monitors utilizing a multiple clock shift

registers and HBLANK and VBLANK (horizontal and vertical blanks) states/signals

(15:62-16:35). Hannah and Snex9x are analogous art because they both relate to

adaptation of apparatus to different, conventionally non-adaptable, apparatus; such as

high resolution signals to low resolution displays or game ROMs emulated to different

game machines/systems. Therefore it would have been obvious to one of ordinary skill

in the art at the time of applicant's invention to include the horizontal blank and vertical

blank signals and clock system of Hannah with Snes9x so that the system can be

emulated using a plurality of different display devices, making the game more adaptable

to different display devices, including low resolution display devices.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x:

The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in

view of Dahl et al. and Gameboy98 as applied to claim 6 above and in view of

Mullarkey et al. (US 6,192,446).

Regarding claim 28, Snes9x does not disclose the use of a no-operation look

ahead feature. However, Mullarkey et al. discloses a no operation look ahead feature

that utilizes a look ahead circuit that will examine subsequent instructions and

determine what banks in memory the instructions are intended for (Mullarkey 7:8 – 48).

If the instructions are not meant for a specific bank of memory than that bank of memory

can be powered down, thus optimizing the performance of the chip and system.

One of ordinary skill in the art would be motivated to modify Snes9x in view of

Mullarkey et al. for the purpose of providing a no-operation look-ahead feature. This

would provide for a more efficient system that optimizes chip performance. If

instructions are not meant for specific memories than those memories are not powered

up thereby wasting processing time.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x:

The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in

view of Dahl et al. and Gameboy98 as applied to claim 6 above and in view of

Farber et al. (US 5,903,760)

Regarding claim 30, Snes9x discloses a video game platform emulator as

discussed above. The video game emulator emulates a video game platform on a

different target platform. The purpose of the emulator is to emulate the video game

platform on the target platform in every way. This would include the way in which the

emulated video game platform would handle CPU flags conditions. Snes9x does not

specifically disclose the details of how the emulator handles CPU flags. However,

Farber et al et al discloses a system of running Reduced Instruction Set Architecture

(RISC) code on a system that is meant for Complex Instruction Set Architecture (CISC)

or vice versa. Farber discloses that RISC may not support the setting of status flags as

CISC would (Farber 2:17 – 22). Thus, Farber discloses a method of executing code

that utilizes the setting of status flags on a system that has no native support for status

flags (Farber 2:64 – 67). Farber discloses the use of a translator that is akin to an

emulator program in that both transform non-native code into a format that the target

platform can utilize (Farber 3:42 – 54). Farber discloses that the translation capsule

table emulates the setting of status flags as part of the translated compare function.

The flags are emulated by allocating bit fields within a general-purpose register (Farber

4:60 – 5:3).

One of ordinary skill in the art would be motivated to modify Snes9x in view of

Farber et al. for the purpose of modeling the emulation of the video game platform to

allow for the updating of CPU flags, as this would enhance the capabilities of the target

platform. The target platform would be able to preserve and emulate a video game platform that utilizes data such as flags even though the target platform may not natively do so.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. and Gameboy98 as applied to claim 6 above and in view of Traut (US 5,790,825).

Regarding claim 31, Snes9x discloses a video game platform emulator as discussed above. However, Snes9x does not explicitly disclose that the emulated video game platform program counter is mapped to the target platforms memory, such as in a general-purpose register. Traut discloses an emulation system, wherein the program counter of the guest or emulated platform is mapped to the cache of the host or target platform (Traut 4:17 – 29).

One of ordinary skill in the art would be motivated to modify Snes9x in view of Traut to provide a system that maps the program counter of the video game platform to the memory of the target system. This would provide for lower address translation overhead, thus eliminating burdensome demands on the target platform.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in

view of Dahl et al. and Gameboy98 as applied to claim 6 above, in view of Munshi

(US 6,084,600) and in further view Duruoz et al. (US 6,658,056 B1)

Regarding claim 33, Snes9x discloses a video game platform as discussed above. Snes9x discloses an emulator that can operate in full screen or windowed mode (Snes9x page 7). Snes9x does not disclose the usage of screen memory buffers that are larger than the display are to improve paging usage and the transferring of a subset of said memory buffer using BITBLIT. Duruoz et al discloses a video graphics display method wherein a larger buffer memory is utilized for optimum use of the available memory and for optimal preservation of data to meet the highest performance requirements (col. 11, lines 1-27). By using a larger memory buffer memory processing due to the constant rendering of the display area would be reduced. Thus display information would not have to be rewritten or transferred out of storage by means of paging. Munshi et al discloses a system for the speeding up of pixel data transfers (bitblits) by compressing and word aligning the data transferred. Munshi discloses that one way to reduce the amount of required bandwidth in a system when transferring pixel data is to use bitblit operations, wherein a rectangular region within the display memory is specified and data for pixels within the region is transferred (Munshi 1:57 – 62). While, Munshi discloses that this approach is sometimes associated with problems, it is stated that this is still effective for transferring data.

One of ordinary skill in the art would be motivated to modify Snes9x in view of Munshi and in further view of Duruoz et al. to provide a memory buffer that is larger than the display area and using BITBLT to transfer data from memory to the display area.

This would enable the system to eliminate memory-processing overhead thus making

m. BLIT operations are known for reducing the bandwidth loads upon a system when

updating pixel information in memory.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x:

The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in

view of Dahl et al. and Gameboy98 as applied to claim 6 above, in view of Reed et

al. (US 6,058,288).

Regarding claim 34, Snes9x discloses a video game platform as discussed

above. Snes9x does not disclose the target platform comprising an airline seat-back

controller. Reed et al. however discloses a passenger control unit that is in an airplane

seat. The PCU can be in the armrest or the back of the seat (Reed et al 18:41 – 19:6).

The airline system can be used for a plurality of uses such as gaming, computing or

watching movies (Reed et al 6:26 – 36). Reed further states that the game system can

be used for games like Super Nintendo Entertainment Service, which Snes9x

emulates.

One of ordinary skill in the art would be motivated to modify Snes9x in view of

Reed et al for the purpose of providing an emulator on a target platform such as an

entertainment system on an airplane. This would provide enhance passengers flying

experience despite being on long trips.

Response to Arguments

Applicant's arguments filed 12/06/2007 have been fully considered but they are not persuasive.

Applicant alleges that Dahl teaches an emulator for emulating an IBM System/36 mass storage device and is therefore does not provide relevant teachings for emulating a game system. The examiner respectfully disagrees. Like the invention and that of the prior art, Dahl teaches emulation of programs intended for one system and to be used for anther system and teaches methods and apparatus for use in such implementation of said emulation.

Regarding applicant's arguments towards Dahl's caching, please refer to the rejection above regarding the design choice.

Regarding applicant's arguments drawn towards claim 23, Dahl teaches the limitations of "using said pointer table system to control memory access by remapping memory access instructions into function calls." Dahl teaches the use of remapping the memory access instructions to function calls using a pointer system and the 16-bit page number acts as a function call to access the associated memory location which has been remapped and addressed to the new 16-bit page number (5:11-46).

Regarding arguments drawn towards claim 29, the limitations of claim 29 are notoriously well known to be included in all systems comprising a processor as such claimed functions of modeling native instruction register as a union of byte, word and long register formats are performed by all processors as such functions are a basic

operation of assembly program language. Please consider any literature on "x86

architecture."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

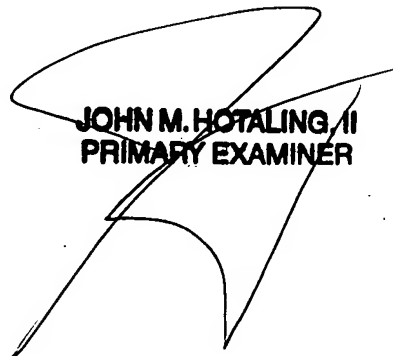policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dat T. Nguyen whose telephone number is (571) 272-

2178. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Robert E. Pezzuto can be reached on (571)272-6996. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dat Nguyen

JOHN M. HOTALING II
PRIMARY EXAMINER